Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

The resolutions reported at the last meeting, from the Committee on the By-laws, were taken up for consideration, and having been amended, the Chair decided that they must lie over until the next meeting.

On motion of Mr. Ord, the Committee appointed to report on the condition of the manuscripts of the Society was discharged.

On motion of Mr. Ord, the Librarian was directed to send a set of the new series of the Transactions of the Society to the Magnetic and Meteorological Observatory of the Institute of Mines of St. Petersburg, and to transmit them hereafter as they appear.

On motion of Dr. Dunglison, the Librarian was instructed to carry into effect henceforth, Chap. VIII. Sect. 3d, of the By-laws of the Society.

Stated Meeting, December 5.

Present, twenty-three members.

Dr. FRANKLIN BACHE, Vice-President, in the Chair.

Letters were received and read:—

From the Royal Prussian Academy of Sciences, dated 1st August, 1845, on transmitting the Transactions and Monthly Proceedings of the Academy:—

From Col. Abert, dated Washington, 3d December, 1845, acknowledging the receipt of notice of his appointment to prepare an obituary notice of the late Mr. Nicollet: and,—

From Dr. Wood, dated Philadelphia, 27th November, 1845, accepting the appointment to prepare an obituary notice of the late Dr. Beasley.

The following donations were announced:—

FOR THE LIBRARY.

Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin. Aus dem Jahre, 1843. Berlin, 1845. 4to.—*From the Royal Academy of Sciences of Berlin.*

Bericht über die zur Bekanntmachung geeigneten Verhandlungen der Königl. Preuss. Akademie der Wissenschaften zu Berlin. Aus dem Jahre, 1845. January to June, inclusive, 6 numbers. 8vo. July, Aug. Sept. Oct. Nov. Dec. 1844, 4 numbers. 8vo.—*From the same.*

Boston Journal of Natural History. Containing Papers and Communications read before the Boston Society of Natural History, and published by their direction. Vol. V. No. 2. Boston, 1845. 8vo.—*From the Society.*

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. II. Nos. 10, 11. July, August, September, October, 1845. 8vo.—*From the Academy.*

Journal of the Franklin Institute of the State of Pennsylvania. Third Series. Vol. X. November, 1845. 8vo.—*From Dr. R. M. Patterson.*

Magnetical and Meteorological Observations made at Washington, under Orders of the Hon. Secretary of the Navy, dated Aug. 13, 1838. By Lieut. J. M. Gilliss, U. S. Navy. Washington, 1845. 8vo.—*From the Author.*

The Medical News and Library. Vol. III. Dec. 1845. No. 36. 8vo.—*From Messrs. Lea & Blanchard.*

Lettre à M. Ph. Fr. de Siebold sur les Collections Ethnographiques. Par M. Jomard. 8vo.—*From the Author.*

Monument à Christophe Colomb. Son Portrait. Par M. Jomard. 8vo.—*From the same.*

Des Cartes en Relief. Par M. Jomard. 8vo.—*From the same.*

ADDITION TO THE LIBRARY BY PURCHASE.

Astronomische Nachrichten. No. 548, with Supplementary Number. 4to.

The list of outstanding Committees on subjects of science was read.

Dr. Patterson read an obituary notice of the late Mr. Gummerè.

The list of outstanding obituary Committees was read.

Dr. Boyè presented a specimen of the true nitric ether, the article commonly so called being hyponitrous ether, and explained the mode of obtaining it, and the marked differences between it and the hyponitrous ether, and referred to a new method of preparing the latter substance.

Prof. Stephen Alexander, of Princeton, N. J., made a verbal communication relative to some Miscellaneous Contributions to Astronomical Science, which he stated he might present in a more permanent form hereafter.

I. *On a Minute Correction in the Position of the Tropic on the Terrestrial Spheroid.*

Prof. Alexander observed, that if the tropic were to be regarded as the parallel of a place, at which the sun was vertical at the time of the solstice, then the central ray from the sun must coincide with the plumb line of the place, upon the tropic, at which it was then noon. The angle made by this plumb or *vertical* line, with the plane of the equator, i. e. the measure of the *geographic* latitude of the place, would exceed the angle with the same plane, made by the line joining the centres of the sun and earth, i. e. the *obliquity* of the ecliptic, by a very minute quantity. Prof. A. showed how this excess might readily be computed. It amounts to but 0″.0217; the measure of which, on the earth's meridian, is rather less than 2 feet 2¼ inches.

II. *On a Region of Continued Twilight.*

It being considered as established, that the region of twilight extended about 18° beyond the terminator, or boundary of sunshine, it followed, that whenever the sun's declination was less than 18°, the pole at which the sun had set, would still be within the region—or zone as it might be termed—of twilight; and all places within a determinate distance of that pole must revolve within this same region, and thus, during their whole diurnal rotation, the inhabitants, if any, of such places, would experience a continued twilight of variable intensity. This circumpolar region must be most extensive within the arctic circle, about the 17th of October, and the 24th of February; and within the antarctic circle, about the 14th of April, and the 29th of August: allowance being made for the encroachment upon the terminator due to refraction, the sun's semidiameter, &c.

III. *On Temporary Stars.*

Prof. A. gave a brief statement of some of the hypotheses which had been devised to account for the phenomena presented by these bodies, and then suggested the following modification of one of them:—

A temporary star may be regarded as a sphere having its axis of rotation oblique to the direction of the star's place, as seen from the earth. This sphere, moreover, may be presumed to be in a great measure opaque; insomuch, that but a small spot on that portion of it, turned toward the earth, would be luminous, and the situation of this spot be similar to that of a star on the celestial sphere, *near to the circle of perpetual occultation.* Such spot would come somewhat rapidly into view, acquiring very speedily an almost maximum brightness: the subsequent diminution of its brightness would, moreover, be as rapid as its increase had been, and during by far the larger part of the star's rotation, the luminous portion, and of course the star itself, would be invisible. This supposes the star to be very large, or otherwise excessively bright, or else comparatively near; or some or all of these combined.

IV. *On the Dragging of the Shadows of the Earth and other Planets, as well as those of their Satellites.*

Prof. A. remarked, that while the tangent ray, which at any instant was situated in the limit of the earth's shadow, was subject to the progressive motion of light, the earth itself moved onward with a velocity due to its annual motion in its orbit. The limit of the shadow would therefore pass through the points which the successive tangent rays, after they had left the earth, had at any instant reached. The whole shadow would, therefore, *drag* or fall behind the direction of the line joining the centres of the sun and earth. *The angular amount* of this dragging of the shadow would, however, be *equal and opposite to the sun's annual aberration;* insomuch, that the *direction* of the shadow would be the opposite to that of the *apparent* place of the sun, as affected by the annual aberration. A closer investigation would indicate an essentially similar result with respect to the moon and planets, when their shadows or penumbræ fell upon the earth. Hence the phenomenon of the dragging would be wholly masked, in the case of an eclipse of either sun or moon, or that of the transit of an inferior planet. When, however, the earth was not the body in question, or the shade did not fall upon the spectator, as in the case of an eclipse of one of Jupiter's satellites, an equation must be due to the dragging of the shadow, though the circumstances might render its effect insensible to observation. These and the preceding observations were illustrated by diagrams, and,—

V. Prof. A. exhibited also a Diagram of *Sundry Curves illustrative of the Equation of Time.*

The first was a curve of contrary flexure, the abscissas of which were proportionate to time, while the ordinates represented the amount of equation due to the obliquity of the ecliptic. This curve intersected the axis of abscissas at the points representing the instants of the equinoxes and solstices. The second curve was similarly constructed, and had the same axis of abscissas, but its ordinates represented the amount of equation due to the elliptical form of the earth's orbit, and, consequently, intersected the common axis of abscissas at the points representing the instants of the earth's arrival at the aphelion and perihelion. The third curve was formed by referring to a new, and in all respects similar axis of abscissas, the algebraic sum of the coexisting ordinates of the two former curves. It intersected the new axis of abscissas at the points representing the instants at which the actual equation of time is zero.

By supposing the second curve to change its position by a transfer along the common axis of abscissas, while the first remained nearly fixed, it was observed that the changes in the equation of time, for a period either past or future, might be readily exhibited.

Mr. Justice made the following communication to the Society:—

Whilst trying some experiments with a five bar horse shoe magnet, whose force was equal to raising five pounds in weight, I had occasion to place a needle afloat on the surface of water contained in a glass tumbler. The needle accidentally sinking during the experiment, induced me to apply the magnet outside of the tumbler, to raise it again; this was easily done, the needle following up the side of the tumbler the poles of the magnet, which were kept on a plane, so as to admit of it being raised in a horizontal position. To my great surprise, when the needle was thus raised to the surface of the water, and the magnet withdrawn, it again floated as though it had not been wetted; the experiment was frequently repeated with like results, and on close observation the particles of water seemed to be unusually agitated.

The Treasurer, Mr. Ord, presented his account, which, in accordance with the regulations of the Society, was referred to the Committee on Finance.

The Committee of Publication presented their report, which was read.

Mr. Frazer, Reporter, presented to the Society No. 33 of the Proceedings of the Society, just published.

The Society then proceeded to the consideration of the resolutions reported by the Committee on By-laws, and amended at the last meeting of the Society.

On motion of Mr. Fraley, the subject was referred back to the Committee, with instructions to report forthwith; which being complied with, the resolutions were reported in an amended form.

Special Meeting, December 16.

Present, nineteen members.

Dr. FRANKLIN BACHE, Vice-President, in the Chair.

The Chairman stated that the meeting had been called at the request of a Committee appointed to take such steps as might seem to them expedient, in consequence of the claim of the executors of the late Mr. Nathan Dunn, against the Society.

The Committee having reported, the subject was referred to a Committee, consisting of Mr. Cope, Mr. T. Biddle, Mr. Vanderkemp, Mr. Dillingham, and Mr. Ord, who were authorized to associate with themselves such other members as they should think proper.

Stated Meeting, December 19.

Present, thirty-three members.

Dr. FRANKLIN BACHE, Vice-President, in the Chair.

The Right Rev. Dr. Potter, Bishop of the Protestant Episcopal Church for the Diocese of Pennsylvania, was introduced, and took his seat.

Letters were announced and read:—

From the Secretary of State to Mr. J. R. Ingersoll, dated